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PN - JP10256181 A 19980925

TI - MANUFACTURE OF SEMICONDUCTOR DEVICE

FI - C23C14/04&B ; H01L21/28&L ; H01L21/88&C ; H01L21/90&C ; H01L21/306&F ; H01L29/80&F

PA - JAPAN ENERGY CORP

IN - KIYAMA TAKAO

AP - JP19970082184 19970314

PR - JP19970082184 19970314

DT - I

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AN - 1998-574398 [49]

TI - FET manufacturing method - involves forming source electrode in exposed surface of wafer after depositing ohmic material onto wafer etched portion of predetermined thickness

AB - JP10256181 The method involves forming a SiO₂ film (4), SiN film (6) and a photoresist (8) on the surface of a wafer (2) made of GaAs. A vent (7) is formed in the photoresist by photolithography technique after which the SiO₂ film and SiN film are etched using hydrofluoric acid group agent. Due to etching the wafer is exposed. Subsequently, the exposed surface of wafer is etched to a depth of 50-500Å using H₂SO₄:H₂O₂:H₂O mixed solution. An ohmic material is deposited on the wafer after which a source electrode (10) is formed on the wafer.

- ADVANTAGE - Promotes capability to withstand high breakdown voltage.

- (Dwg.1/2)

IW - FET MANUFACTURE METHOD FORMING SOURCE ELECTRODE EXPOSE SURFACE WAFER AFTER DEPOSIT OHM MATERIAL WAFER ETCH PORTION PREDETERMINED THICK

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IC - C23C14/04 ; H01L21/28 ; H01L21/306 ; H01L21/3213 ; H01L21/338 ; H01L21/768 ; H01L29/812

MC - L04-C08 L04-C11C L04-E01A

- U11-C18A3

DC - L03 U11

PA - (NIHA) JAPAN ENERGY CORP

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TI - MANUFACTURE OF SEMICONDUCTOR DEVICE

AB - PROBLEM TO BE SOLVED: To manufacture a semiconductor device without leaving any scum, etc., between a source electrode and a drain electrode and the surface of a wafer.

- SOLUTION: After an SiO₂ film 4, an SiN film 6, and a resist 8 are successively deposited on an ion-implanted GaAs substrate 2, an opening 7 is formed through the resist 8. Then the parts of the SiO₂ film 4 and SiN film 6 contained in the opening 7 are partially removed by RIE (reactive ion etching) and PE (plasma etching) and the surface of the GaAs substrate 2 is exposed in the opening 7 by using a hydrofluoric acid etchant. In addition, the exposed surface of the substrate 2 is cleaned by wet-etching the surface to a depth of 100Å by using an H₂SO₄:H₂O:H₂O mixed solution. Finally, a source electrode 10 is formed on the exposed surface of the substrate 2 by lifting-off an ohmic metal after vapor-depositing the ohmic metal.

I - H01L21/28 ; C23C14/04 ; H01L21/306 ; H01L21/3213 ; H01L21/768 ; H01L21/338 ; H01L29/812

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IN - KIYAMA TAKAO

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ABV - 199814

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